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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO	
10/040,834	01/07/2002	Kazuhiro Ebara	P/1071-1521 2656		
7590 08/25/2004			EXAM	EXAMINER	
Keating & Bennett, LLP			HANLEY, JOHN C		

10400 Eaton Place Suite 312 Fairfax, VA 22030

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ART UNIT

2856

Please find below and/or attached an Office communication concerning this application or proceeding.

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION. Examinos of time may be revisible under the proximation of 37 CFR 1.13(a), in ne event, however, may a reply be timely filed or from may be reply be timely filed. If the period for reply specified above is treat brain thinty (20) days, a reply within the statutory minimum or thinty (30) days will be considered timely. If the period for reply specified above is treat brain thinty (20) days, a reply within the statutory minimum or thinty (30) days will be considered timely. If the period for reply specified above is treat brain thinty (20) days, a reply within the statutory minimum or thinty (30) days will be considered timely. If the period for reply specified above, the maximum statutory period will apply and will septe \$10.000 (a) of the period for reply will be considered timely. If the period for reply specified above, the maximum statutory period will apply and will specified \$10.000 (a) of the period by the Timels and the period for reply will be considered timely. If the period for reply specified above, the maximum statutory period will be considered timely. If the period for reply specified above, the maximum statutory period will be considered timely. If the period for reply specified above, the maximum statutory period is the period of t		Application No.	Applicant(s)					
John C Hanley 2856 A Period for Repty		10/040,834	EBARA ET AL.					
The MALLING DATE of this communication appears on the cover sheet with the correspondence address—Period for Repty A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MALLING DATE OF THIS COMMUNICATION. Extensions of time may be available under the provisions of 37 CPR 1.13(a). In no event, towever, may a raply be timely filled sides SSX (b) MoNTHS from the malling date of this communication. Extensions of time may be available under the provisions of 37 CPR 1.13(a). In no event, towever, may a raply be timely filled sides SSX (b) MoNTHS from the malling date of this communication. If NO extend reply is specified shows, the maximum statutory selected was period will explicate the realing date of this communication. If NO extend reply is specified shows, the maximum statutory selected was period and supplication to become ABMICONED (38 U.S.C. § 133). Since the same plaint form adjustment. See 37 CPR 1.704(b). Status 1) □ Responsive to communication(s) filled on @9 June 2004. 2a) □ This action is FINAL. 2b) □ This action is non-final. 3) □ Since this application is in condition for allowance except for formal matters, prosecution as to the ments is closed in accordance with the practice under Exparte Quayle, 1935 C.D. 11, 453 O.G. 213. Disposition of Claims 4) □ Claim(s) ② 4.6.8 and 13 is/are pending in the application. 4) ○ Claim(s) ③ 18 is/are allowed. 6) □ Claim(s) ② 4.6.8 and 13 is/are rejected. 7) □ Claim(s) ③ 18 is/are objected to by the Examiner. Application Papers 9) □ The specification is objected to by the Examiner. 10) □ The drawing(s) filled on 3/25/02 is/are: a) □ accepted or b) ② objected to by the Examiner. Application Papers 9) □ The specification is objected to by the Examiner. Note the altached Office Action or form PTO-152. Priority under 35 U.S.C. § 119 12 □ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f). a) □ All b) □ Some * o) □ None of 1 □ Certified copies of the priority documents have been receiv	Office Action Summary	Examiner	Art Unit					
A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE @ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION. - and SIX (5) MONTHS from the smalling date of this communication if the period for reply sepecified above, the manner metalities grain of this communication if the period for reply sepecified above, the manner metalities grain of which are the smalling date of this communication if the period for reply sepecified above, the manner metalities period will apply and will expert SIX (5) MONTHS from the mailing date of this communication if the period for reply sepecified above, the manner metalities period will apply and will expert SIX (5) MONTHS from the mailing date of this communication if the period for reply sepecified above, the manner metalities period will apply and will expert SIX (5) MONTHS from the mailing date of this communication Any reply severable by the Office latter than them member after the mailing date of this communication, even if timely filled, may reduce any semmed parent term adjustment. See 37 CPR 1.70(b). Status 1) Responsive to communication(s) filled on 09 June 2004. 2a) This action is FINAL 2b) This action is non-final. 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11, 453 O.G. 213. Disposition of Claims 4) Claim(s) 2, 4,6,8 and 13 is/are pending in the application. 4a) Of the above claim(s) is/are withdrawn from consideration. 5) Claim(s) 4,8,8 and 13 is/are rejected. 7) Claim(s) 4,8 and 13 is/are rejected. 7) Claim(s) 4,8 and 13 is/are rejected. 1) The specification is objected to by the Examiner. 10) The drawing(s) filled on 3/25/02 is/are: a)		John C Hanley	2856	p				
THE MAILING DATE OF THIS COMMUNICATION. - Extendinate future may be available under the provision of 3 CFR 1.196(b). In no event, however, may a risply be limitely filed after SIX (6) MONTHS from the mailing date of this communication; - If the provision from the provision of	The MAILING DATE of this communication app Period for Reply	ears on the cover sheet with the c	orrespondence addre	ss				
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This action is FINAL. 2b ☐ This action is non-final. 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11, 453 O.G. 213. Disposition of Claims 4) ☐ Claim(s) 2.4.6.8 and 13 is/are pending in the application. 4a) Of the above claim(s) is/are withdrawn from consideration. 5) ☐ Claim(s) is/are allowed. 6) ☐ Claim(s) is/are objected to. 7) ☐ Claim(s) are subject to restriction and/or election requirement. Application Papers 9) ☐ The specification is objected to by the Examiner. 10) ☐ The drawing(s) filed on 3/25/02 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner. Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d). 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152. Priority under 35 U.S.C. § 119 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f). a) ☐ All b) ☐ Some * c) ☐ None of: 1. ☐ Certified copies of the priority documents have been received. 2. ☐ Certified copies of the priority documents have been received in Application No 3. ☐ Oppies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)). * See the attached detailed Office action for a list of the certified copies not received. Attachment(s) 1) ☐ Notice of Partsperson's Patent Drawing Review (PTO-948) 3) ☐ Information Disclosur's Statement(s) (PTO-1449 or PTO/SB/08) Paper No(9)/Mall Date Paper No(9)/Mall D	Status	•						
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All bigsposition of Claims 4) □ Claim(s) 2.4.6.8 and 13 is/are pending in the application. 4a) Of the above claim(s) is/are withdrawn from consideration. 5) □ Claim(s) is/are allowed. 6) □ Claim(s) 2.4.6.8 and 13 is/are rejected. 7) □ Claim(s) 3 is/are objected to. 8) □ Claim(s) 3 is/are objected to. 8) □ Claim(s) 3 is/are objected to restriction and/or election requirement. Application Papers 9) □ The specification is objected to by the Examiner. 10) □ The drawing(s) filed on 3/25/02 is/are: a) □ accepted or b) □ objected to by the Examiner. Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d). 11) □ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152. Priority under 35 U.S.C. § 119 12) ☑ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f). a) ☑ All b) □ Some * c) □ None of: 1. □ Certified copies of the priority documents have been received in Application No 3. □ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)). * See the attached detailed Office action for a list of the certified copies not received. Attachment(e) 1) □ Notice of References Cited (PTO-892) 1) □ Notice of Traftsperson's Patent Drawing Review (PTO-948) 3) ☑ Information Discloeure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date	3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is							
Al) Claim(s) 2.4,6.8 and 13 is/are pending in the application. 4a) Of the above claim(s) is/are withdrawn from consideration. 5) □ Claim(s) is/are allowed. 6) ☒ Claim(s) 2.4,6.8 and 13 is/are rejected. 7) ☒ Claim(s) 13 is/are objected to. 8) □ Claim(s) are subject to restriction and/or election requirement. Application Papers 9) □ The specification is objected to by the Examiner. 10) ☒ The drawing(s) filed on 3/25/02 is/are. a) □ accepted or b) ☒ objected to by the Examiner. Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). Replacement drawing sheel(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d). 11) □ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152. Priority under 35 U.S.C. § 119 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f). a) ☒ All b) □ Some * c) □ None of: 1. □ Certified copies of the priority documents have been received. 2. □ Certified copies of the priority documents have been received in Application No 3. □ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)). * See the attached detailed Office action for a list of the certified copies not received. Attachment(s) 1) □ Notice of References Cited (PTO-892) Autoce of Draftsgerson's Patent Drawing Review (PTO-948) 5) □ Notice of Torfargerson's Patent Drawing Review (PTO-948) 5) □ Notice of Torfargerson's Patent Drawing Review (PTO-158)/08) Paper No(s)/Mail Date	closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11, 453 O.G. 213.							
4a) Of the above claim(s) is/are withdrawn from consideration. 5) □ Claim(s) is/are allowed. 6) ☒ Claim(s) is/are allowed. 7) ☒ Claim(s) is/are objected to. 8) □ Claim(s) are subject to restriction and/or election requirement. Application Papers 9) □ The specification is objected to by the Examiner. 10) ☒ The drawing(s) filed on 3/25/02 is/are: a) □ accepted or b) ☒ objected to by the Examiner. Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d). 11) □ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152. Priority under 35 U.S.C. § 119 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f). a) ☒ All b) □ Some * o) □ None of: 1. □ Certified copies of the priority documents have been received. 2. □ Certified copies of the priority documents have been received in Application No 3. □ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)). * See the attached detailed Office action for a list of the certified copies not received. Attachment(s) 1) □ Notice of References Cited (PTO-892)	Disposition of Claims							
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Application Papers 9) ☐ The specification is objected to by the Examiner. 10) ☒ The drawing(s) filed on 3/25/02 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner. Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d). 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152. Priority under 35 U.S.C. § 119 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f). a) ☒ All b) ☐ Some * c) ☐ None of: 1. ☐ Certified copies of the priority documents have been received. 2. ☐ Certified copies of the priority documents have been received in Application No 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)). * See the attached detailed Office action for a list of the certified copies not received. Attachment(s) 1) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 6/9/0/4.	· <u> </u>							
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Art Unit: 2856

DETAILED ACTION

Information Disclosure Statement

1. In the information disclosure statement filed on 6/9/04, the US Patent was not indicated as considered here, because it was indicated as considered in a prior filed statement.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the capacitor or inductor alternatives for the load impedances in Claim 13 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and

Art Unit: 2856

informed of any required corrective action in the next Office action.

The objection to the drawings will not be held in abeyance.

Claim Objections

3. Claim 13 is objected to because of the following informalities:
The capacitor and inductor subject matter is not depicted in the
drawings. Appropriate correction is required.

Claim Rejections - 35 USC § 103

Claims 2, 4, 6, 8 and 13 are rejected under 35 U.S.C. 103(a) as 4. being unpatentable over Ebara et al, for reasons set forth in prior office actions. Ebara et al shows all of the structure recited in applicant's claims, except a specific recitation that the changeable resistors 18a and 18b are variable resistors, and the specific relative values recited. As previously stated by the examiner, Ebara et al states, "By changing the impedances of the resistors, the characteristics of the vibration gyroscope is adjusted." Therefore, Ebara et al clearly teaches that the resistors are changeable. It would have been obvious to one of ordinary skill in the art to make a resistor changeable by using a variable resistor. Applicant's remarks have been read and considered, but are unpersuasive. One of ordinary skill in the art would recognize that the four impedances of Ebara et al is a balanced bridge arrangement, where null balancing of the bridge is desired at zero output of the sensors. Thus, it would have been obvious to one skilled in the art that to maintain balance at the output, the load impedances would have to be adjusted to correspond with the values of the transducer impedances.

Art Unit: 2856

- 5. Claims 2, 4, 6 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ebara et al in view of Smith or Johnson. These claims are believed to be obvious to one of ordinary skill in the art in view of Ebara et al, alone, as set forth above. However, applicant has demanded further evidence of the examiners assertions. Smith is a textbook showing of balanced bridge measurements, showing the relative values of impedances to balance a bridge. Similarly, Johnson shows the use of variable resistances in 18 and 19 to balance a bridge, and further teaches to do it for temperature characteristics of the bridge. Thus, it would have been obvious to balance the bridge of Ebara et al by adjusting the relative values of the bridge to null the output of the bridge, as taught in Smith or Johnson.
- Applicant argues that Ebara et al requires the same values of 6. load impedances. One skilled in the art would not accept this argument. One skilled in the art would recognize that this condition is ONLY suitable when the impedances of the piezoelectric elements are matched, as recognized by applicant in the first paragraph of page 10 of the disclosure. However, as this condition is difficult to achieve in the real world, calibration of the balance of the bridge by varying the respective relative values of the resistors in the manner recited in the claims would have been obvious to balance the bridge under less ideal conditions normally encountered, as one of ordinary skill in the art would clearly recognize. Further, the Examiner does not regard the phrase "in a matching condition" to be so limited to equal load impedances, as applicant asserts. The matching condition is clearly one that, taken in view of the inherent bridge arrangement, matches the load impedances to the transducer impedances to create a balanced bridge. Adjustment of such a bridge would inherently be performed by

Art Unit: 2856

measurements as claimed to balance the inputs to the differential amplifier for the desired output of the differential amplifier. Such matching conditions would also inherently require the same impedances, i.e., resistive, capacitive, and/or inductive, in the load as the transducers. As Smith and Johnson were cited merely to back up the Examiner's contention that the nature of balanced bridges is well known and well characterized to the extent that one skilled in the art would obviously recognize how to trim the circuit of Ebara et al in the manner recited by applicant, applicant's arguments that neither Smith nor Johnson hint at making corrections as taught in Applicant's claim 2 is not persuasive. It is clearly obvious that to correct balance, either one or both of the load impedances must be adjusted to match the corresponding transducer impedance in the corresponding leg of the bridge.

Conclusion

7. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Art Unit: 2856

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John C Hanley whose telephone number is 571-272-2195. The examiner can normally be reached on M-F 9AM-5:00PM.

Page 6

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on 571-272-2208. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JCH

HEZRON WILLIAMS
SUPERVISORY PATENT EXAMINED

Myrn 4. WD

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